BULLETIN NO. 1004B
August 1, 1962
(Supersedes Bulletin No. 1004A)

BEAM-X® SWITCH

GENERAL PURPOSE SHIELDED
Type BX-2000

The BEAM-X Switch, type BX-2000, is a shielded general purpose 10 position, high vacuum electronic switching tube. It is intended for use wherever multi-position electronic counting, distributing or switching is required. It has frequency capabilities from DC to above 2 MC and features magnetically shielded construction for applications where space conservation is important.

ELECTRICAL CHARACTERISTICS:

RATINGS ABSOLUTE MAX.	VALUE	NOTES
Target Voltage (E_t)	300 Vdc	
Spade Voltage (E_s)	100 Vdc	
Grid Voltage (E_{cc})	200 Vdc	
Shield Grid Voltage (E_{sg})	200 Vdc	
Heater — Cathode Voltage (E_{hk})	±100 Vdc	
Individual Target Dissipation ($P/_{ta}$)	1 W	
Heater Voltage (E_f)	6.3 ±10% V	
Switching Speed (F)	2 MC	Notes 1, 4

TEST CONDITIONS AND TEST LIMITS

The BEAM-X Switch, Type BX-2000, is tested in a circuit similar to Figure 7. These tests are designed to demonstrate current uniformity from position to position within specified limits and operating stability throughout the frequency range at high and low voltage limits.

TEST CONDITIONS	VALUE	NOTES
Spade Resistance (R_s)	150 K ohms	
Target Load Resistance (R_t)	3.3 K ohms	
Target Voltage (E_t)	Equals E_s	
Shield Grid Voltage (E_{sg})	Equals E_s	
Grid Bias Voltage (E_{cc})	50 V	
Grid Switching Voltage (E_i)	—55 V	Note 4
Heater Voltage (E_f)	6.3	
Test Frequency (f)	Pushbutton and 10 KC	Notes 1, 4

TEST LIMITS	VALUE	NOTES
Spade Voltage (E_s)	55 ±10% V	Note 2
Individual Target Current (I_t)	2. 9 ±25% ma	Note 3
Heater Current (I_h)	150 ±10% ma	Note 5
Firing Voltage (E_{co})	100V	Note 7

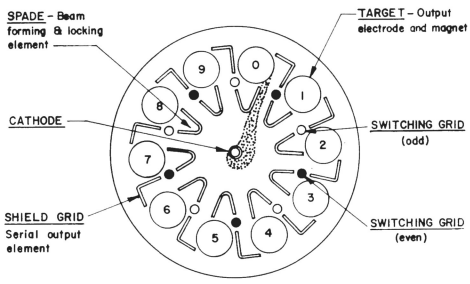
MECHANICAL CHARACTERISTICS:

	VALUE	NOTES
Overall Length	3.125 in. max.	
Seated Height	2.875 in. max.	
Diameter	1.270 in. max.	
Weight Total	2.75 oz.	
Mounting Position	Any	Note 6
Outline	See Figure 6	
Envelope Connection	See Figure 3	

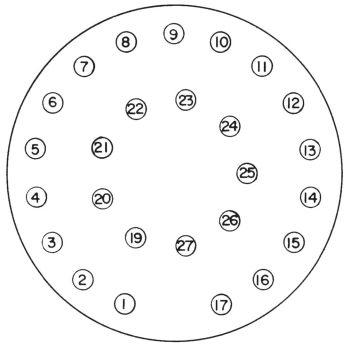
NOTES

1. Tube is tested at 10 KC but will operate in excess of 2 MC under suitable operating conditions.
2. When tube is operated in test circuit.
3. When tube is operated in test circuit at Spade Voltage = 55 V.
4. For higher frequency operation, a greater pulse amplitude is required.
5. When filament is operated at 6.3 V.
6. Tubes may be mounted side by side (no minimum spacing). Tubes should not be mounted on a ferrous chassis.
7. Firing Voltage (DC Cutoff Voltage): That voltage between cathode and spade buss above which erratic electron beam formation will occur. See Bulletin BX-535B, page 5, for detailed explanation.

Detailed theory, circuit design and application data contained in Brochure BX535B.


SPADE - Beam forming & locking element
TARGET - Output electrode and magnet
CATHODE
SWITCHING GRID (odd)
SHIELD GRID Serial output element
SWITCHING GRID (even)

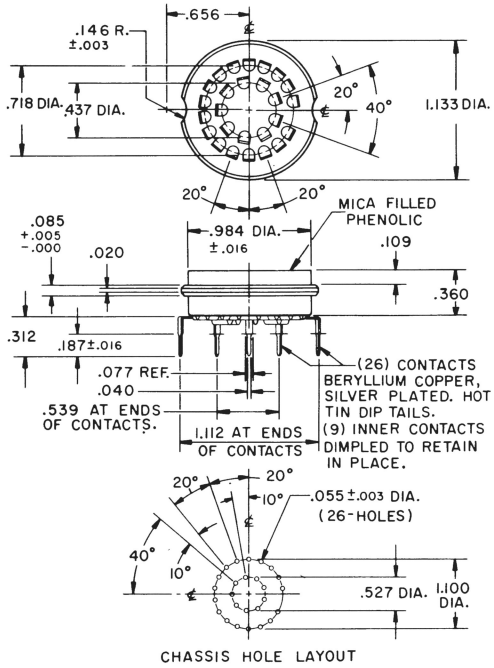
1. CROSS SECTION



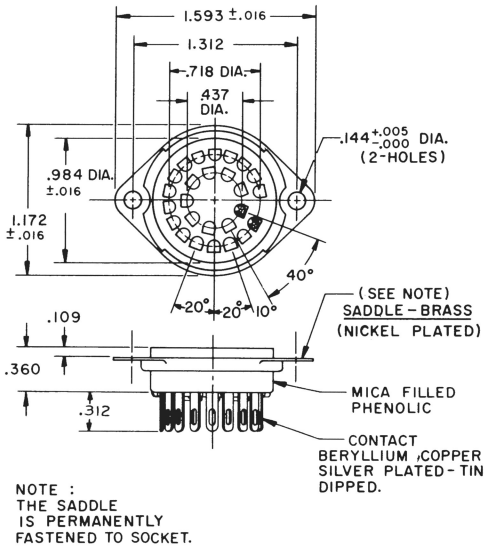
2. PIN NUMBERING DIAGRAM

PIN NO.	CONNECTION	PIN NO.	CONNECTION
1	Spade-0	14	Spade-2
2	Target-9	15	Target-1
3	Target-8	16	Grid Even
4	Grid Odd	17	Target-0
5	Target-7	19	Spade-9
6	Spade-7	20	Spade-8
7	Target-6	21	Heater
8	Target-5	22	Spade-6
9	Spade-5	23	Spade-4
10	Target-4	24	Spade-3
11	Shield Grid	25	Heater
12	Target-3	26	Spade-1
13	Target-2	27	Cathode

3. TUBE CONNECTION TABLE

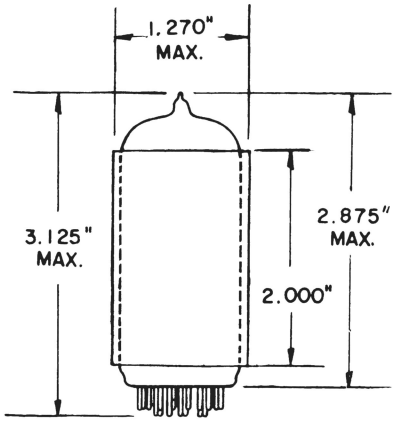


4. PRINTED CIRCUIT SOCKET, SK-131

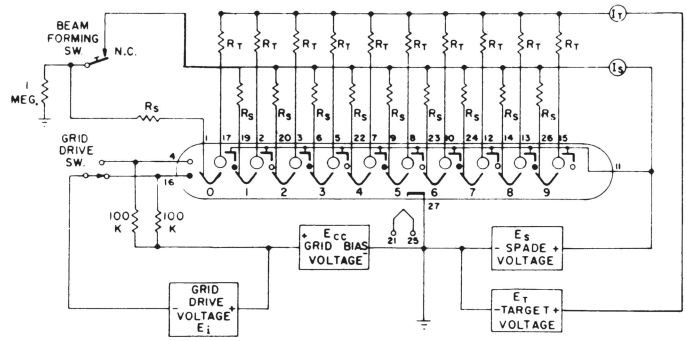


NOTE :
THE SADDLE
IS PERMANENTLY
FASTENED TO SOCKET.

5. GENERAL PURPOSE SOCKET, SK-100



6. OUTLINE DRAWING



7. TYPICAL TEST CIRCUIT

ANOTHER ELECTRONIC CONTRIBUTION BY

Burroughs Corporation

ELECTRONIC COMPONENTS DIVISION

PLAINFIELD, NEW JERSEY

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